

CLAIMS

1. A high-density recording medium, comprising:
a lead-in zone in which recording medium information is recorded in a straight pit type; and
5 a specific area, prior to or within said lead-in zone, in which playback control information regarding a recording capacity of said high-density recording medium is recorded in a wobble type.
- 10 2. The high-density recording medium as set forth in claim 1, wherein said recording medium is a BD-ROM (Blu-ray Disc-ROM).
3. The high-density recording medium as set forth in claim 2, wherein said specific area is a burst cutting area (BCA).
- 15 4. The high-density recording medium as set forth in claim 3, wherein said playback control information is recorded at least in each data unit in said BCA.
- 20 5. The high-density recording medium as set forth in claim 4, wherein said playback control information is recorded in a first byte of said data unit.
- 25 6. The high-density recording medium as set forth in claim 1, wherein said playback control information is channel bit length information variably set to a different value depending on the recording capacity of said high-density recording medium.
7. A method for controlling data playback of a high-density
30 recording medium, comprising the steps of:
 - a) detecting playback control information regarding a

recording capacity of said high-density recording medium from a specific area using a push-pull signal detection mode; and

b) performing a data playback operation with reference to the detected playback control information.

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8. The method as set forth in claim 7, wherein said specific area is a BCA located prior to a lead-in zone of said high-density recording medium.

10 9. The method as set forth in claim 8, wherein said playback control information is detected from a first byte of each data unit in said BCA.

10. The method as set forth in claim 7, wherein said
15 playback control information is channel bit length information variably set to a different value depending on the recording capacity of said high-density recording medium.

11. The method as set forth in claim 10, wherein said step
20 b) includes the step of performing a bit detection mode corresponding to the recording capacity of said high-density recording medium with reference to said channel bit length information to perform the data playback operation.

25 12. A method for controlling data playback of a high-density recording medium, comprising the steps of:

a) sequentially performing a plurality of predetermined bit detection modes with regard to said recording medium to calculate bit error rates in the bit detection modes, respectively; and

30 b) selecting one of said bit detection modes corresponding to a smallest one of the calculated bit error rates and performing a data playback operation in the selected bit detection mode.

13. The method as set forth in claim 12, wherein said plurality of bit detection modes are set to be appropriate respectively to reproductions of high-density recording mediums with different recording capacities.

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14. The method as set forth in claim 13, wherein said different recording capacities are 23Gbytes, 25Gbytes and 27Gbytes.

10 15. An apparatus for controlling data playback of a high-density recording medium, comprising:

a detection unit for performing one of a plurality of predetermined bit detection modes with regard to said high-density recording medium;

15 a decoding unit for calculating and outputting a bit error rate from data bits detected by said detection unit; and

a control unit for controlling said bit detection mode of said detection unit and selecting one of said bit detection modes corresponding to a smallest bit error rate on the basis of the
20 calculated bit error rate.

16. The apparatus as set forth in claim 15, said detection unit comprising:

a plurality of equalizers;

25 a first switch for applying an input radio frequency (RF) signal to one of said equalizers;

a phase locked loop (PLL) connected to output terminals of said equalizers;

a plurality of partial response maximum likelihood (PRML)
30 detectors; and

a second switch for applying an output signal from said PLL to one of said PRML detectors.

17. The apparatus as set forth in claim 15, said decoding unit comprising:

a demodulator for demodulating modulated digital data;
an error correcting unit for performing error correction for
5 the demodulated data; and
a bit error rate (BER) calculator for calculating and outputting said BER of said detected data bits.

18. The apparatus as set forth in claim 16, wherein said
10 control unit is adapted to select one of said equalizers and one of said PRML detectors most appropriate to the reproduction of said high-density recording medium on the basis of BERs calculated based on signal paths sequentially formed by controlling said first switch and second switch.

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19. The apparatus as set forth in claim 18, wherein said control unit is adapted to control said first switch and second switch to connect the selected equalizer and the selected PRML detector to each other, so as to reproduce said high-density
20 recording medium.

20. The apparatus as set forth in claim 16, wherein said equalizers and said PRML detectors are set in pairs to be appropriate respectively to different recording capacities
25 allowable by said high-density recording medium.

21. The apparatus as set forth in claim 20, wherein said different recording capacities allowable by said high-density recording medium are 23Gbytes, 25Gbytes and 27Gbytes.